## REMARKS

This communication is considered fully responsive to the Office action mailed May 19, 2004. Claims 1-23 were examined and stand rejected. Claim 10 is amended to correct a grammatical error. No claims are cancelled. Claims 24-29 are added. Reexamination and reconsideration are requested.

### Claim Rejections – 35 USC § 103

Claims 1-9, 11- 14, 16, and 18-23 stand rejected under 35 U.S.C. § 103(a) as being purportedly unpatentable over U.S. Patent No. 5,097,322 to Fairhurst, and further in view of U.S. Patent No. 6,246,827 to Strolle et al. ("Strolle"). The Applicant respectfully traverses the rejections.

Generally, Fairhurst discloses an apparatus for minimizing cross-color and cross-luminance artifacts in the encoding and decoding of quadrature modulated color television signals. Such artifacts result from imperfect separation of the luminance and chrominance components. Under such conditions, certain luminance components can be interpreted by the decoder in the receiver and decoded as color, resulting in cross-color artifacts. Likewise, certain chrominance components can be interpreted by the decoder in the receiver and decoded as luminance, resulting in cross-luminance artifacts. Fairhurst minimizes these artifacts using an improved compensation circuit, which selectively subtracts a compensated luminance signal from the original luminance signal in accordance with detection of an artifact. Fairhurst also identifies other signal formats which can be used in the Fairhurst implementations, including Phase Alternation Line (PAL), analog formats, etc. Col. 7, lines 22-25. Importantly, Fairhurst does not appear to disclose or suggest encoding schemes and signal formats that constitute block transform encoding schemes.

Strolle discloses various methods of processing a wide bandwidth video signal into a reduced bandwidth signal suitable for transmission or recording via a narrow bandwidth signal medium, particularly various types of VHS format media. Again, Strolle does not appear to disclose or suggest encoding schemes and signal formats that constitute block transform encoding schemes.

Claim 1 recites, among other features, "determining block boundaries", within the recited context of an image that has been "previously processed by block transform encoding". Neither Fairhurst nor Strolle provide any teaching regarding the block transform encoding addressed in claim 1. Therefore, neither Fairhurst nor Strolle, either singly or in combination, anticipate or make obvious the invention of claim 1 because both references fail to disclose or suggest determination of the block boundaries of such an image.

A description of an exemplary implementation for determining block boundaries is provided in the filed application from page 15, line 1 to page 17, line 20, although alternative implementations are not precluded. The Office has pointed to the horizontal and vertical filtering described relative to FIGs. 7A-7C of Fairhurst as a disclosure of determining block boundaries. However, signals described and processed with regard to FIGs. 7A-7C are quadrature modulated color television picture signals, not block transform encoded image signals. Therefore, there are no block boundaries to be determined. Furthermore, the operations described relative to FIGs. 7A-7C of Fairhurst do not determine block boundaries. Instead, these operations process segments of 5 adjacent pixels along three consecutive lines of a video signal. As such, Fairhurst's linear processing of adjacent pixels in a quadrature modulated color television picture signal does not disclose or suggest the determination of block boundaries of a block transform encoded image, as recited in claim 1. Likewise, Strolle similarly fails to disclose or suggest this feature.

In addition, claim 1 recites "adaptively adjusting local saturation variation". Neither Fairhurst nor Strolle disclose or suggest this feature, particularly in the section of the Fairhurst text cited by the Examiner (i.e., col. 4, lines 50-54). In fact, the term "saturation" is not present in either of the cited references.

The Office admits that Fairhurst fails to disclose the recited operation of "adaptively simulating high spatial frequency image", but submits that this feature is taught by Strolle. The Applicant disputes this finding.

The Applicant respectfully points out that the correct claim language is "adaptively simulating high spatial frequency image detail." (Emphasis added). In addition, the Office has pointed to col. 30, lines 13-30 of Strolle in support of its position.

The Applicant respectfully asserts that the referenced section in Strolle discusses spatial filtering, not the simulation of high spatial frequency image detail, which is recited in claim 1. In fact, Strolle's spatial filtering would have a contrary effect by attenuating details of the image.

Pursuant to the foregoing arguments, it is clear that both Fairhurst and Strolle fail to disclose and suggest all of the recited elements of claim 1. Therefore, Fairhurst and Strolle fail to anticipate or make obvious the invention of claim 1. Allowance of claim 1 is earnestly requested.

Claims 2-4 and 16 depend from claim 1, which is believed to be allowable. Accordingly, claims 2-4 and 16 are believed to be allowable for at least the same reasons as claim 1, and allowance of claims 2-4 and 16 is earnestly requested.

The Office rejects claim 5 under a similar analysis as claim 1. However, claim 5 recites different features from those in claim 1, and the Office is required to identify disclosure of these features in the cited references or allow the claim. With regard to claim 1, the Office admits that Fairhurst fails to disclose the recited operation of "adaptively simulating high spatial frequency image", but submits that this feature is taught by Strolle. The Applicant submits that the Office's analysis of claim 5 is insufficient because the claim language of "adaptively simulating" feature of claim 5 differs significantly from the corresponding language in claim 1.

The Applicant respectfully points out that the correct claim language is "adaptively simulating high spatial frequency image detail by means of sharpening and addition of noise." (Emphasis added). In addition, the Office has pointed to col. 30, lines 13-30 of Strolle in support of its rejection. The Applicant respectfully asserts that the referenced section in Strolle discusses spatial filtering, not the simulation of high spatial frequency image detail, which is recited in claim 1. Furthermore, Strolle does not disclose a sharpening operation or the beneficial introduction of noise. In fact, Strolle treats noise as something to be detected and removed, and Strolle's spatial filtering would have the opposite effect of attenuating some aspect (e.g., noise) of the image.

In addition, claim 5 does include some similar features as claim 1 so as to patentably distinguish claim 5 over the prior art. Claim 5, among other features, "determining block boundaries", within the recited context of an image that has been

"previously processed by block transform encoding". The Applicant asserts that this feature is missing from both Fairhurst and Strolle for at least the same reasons as provided with regard to claim 1. Therefore, neither Fairhurst nor Strolle, either singly or in combination, anticipate or make obvious the invention of claim 5 because both references fail to disclose or suggest determination of the block boundaries of such an image.

Pursuant to the foregoing arguments, it is clear that both Fairhurst and Strolle fail to disclose and suggest all of the recited elements of claim 5. Therefore, Fairhurst and Strolle fail to anticipate or make obvious the invention of claim 5. Allowance of claim 5 is earnestly requested.

Claims 6-8 depend from claim 5, which is believed to be allowable. Accordingly, claims 6-8 are believed to be allowable for at least the same reasons as claim 5, and allowance of claims 6-8 is earnestly requested.

The Office rejects claim 9 under a similar analysis as claim 1. However, claim 9 includes some similar features as claim 1 so to patentably distinguish claim 9 over the prior art. Claim 9, among other features, "determining block boundaries", within the recited context of an image that has been "previously processed by block transform encoding". The Applicant asserts that this feature is missing from both Fairhurst and Strolle for at least the same reasons as provided with regard to claim 1. Therefore, neither Fairhurst nor Strolle, either singly or in combination, anticipate or make obvious the invention of claim 9 because both references fail to disclose or suggest determination of the block boundaries of such an image.

Furthermore, claim 9 recites "adaptively adjusting local saturation variation". Neither Fairhurst nor Strolle disclose or suggest this feature, particularly in the section of the Fairhurst text cited by the Examiner (i.e., col. 4, lines 50-54). In fact, the term "saturation" is not present in either of the cited references.

Pursuant to the foregoing arguments, it is clear that both Fairhurst and Strolle fail to disclose and suggest all of the recited elements of claim 9. Therefore, Fairhurst and Strolle fail to anticipate or make obvious the invention of claim 9. Allowance of claim 9 is earnestly requested.

Claims 11-14 have been rejected based on a similar analysis to that presented for claims 2-4. However, claims 11-14 depend from claim 10 and therefore include the recited features of sharpening existing detail and simulating missing detail by the addition of noise, neither of which recited in claims 2-4 or analyzed in the rejection of claims 2-4. As such, the Office has failed to property reject claims 11-14.

Moreover, claims 11-14 depend from claim 10, which is believed allowable for at least the reasons give below. Accordingly, claims 11-14 are believed to be allowable for at least the same reasons as claim 10, and allowance of claims 11-14 is earnestly requested.

Claims 18-23 depend from one of claims 1, 5, 10, and 15, which are all believed allowable, as discussed above and below. Accordingly, claims 18-23 are believed to be allowable for at least the same reasons as their base claims, and allowance of claims 18-23 is earnestly requested.

**Claim Rejections – 35 USC §102**

Claims 10, 15, and 17 stand rejected under 35 USC §102(b) as being purportedly anticipated by Fairhurst. The Applicant respectfully traverses the rejections.

Claim 10 has been amended to correct a grammatical error, and the amendment does not narrow the claim. Claim 10 (as amended) recites, in its entirety:

> A method of reducing artifacts in an image previously processed by block transform encoding comprising the steps of sharpening existing detail and simulating missing detail by the addition of noise.

Fairhurst fails to provide any teaching regarding the block transform encoding addressed in claim 10. In addition, the text in Fairhurst cited by the Office in support of the rejection discusses "softening . . . while effectively removing the information that produces cross-color errors", which does not constitute sharpening existing detail or simulating missing detail. Throughout its disclosure, Fairhurst teaches filtering of a luminance signal and utterly fails to disclose sharpening existing detail or simulation of missing detail by the addition of noise. Accordingly, Fairhurst fails to anticipate the invention of claim 10. Allowance of claim 10 is earnestly requested.

Claim 15 recites, in its entirety:

> A method of reducing artifacts in an image previously processed by block transform encoding comprising the step of selecting a median

> filter window based on an assessment of a pixel value according to a variance of a binary mask.

Fairhurst fails to provide any teaching regarding the block transform encoding addressed in claim 15. In addition, the text cited by the Office in support of the rejection discusses filters processing five adjacent pixels horizontally along three consecutive lines of video signal. However, it appears that Fairhurst merely steps through the video scan lines in a mechanical sequential fashion, not based upon an assessment and not in accordance with any binary mask. Fairhurst, in both the cited portion as well as anywhere else in the disclosure, fails to disclose "selecting a median filter window based on an assessment of a pixel value according to a variance of a binary mask". Accordingly, Fairhurst fails to anticipate the invention of claim 15. Allowance of claim 15 is earnestly requested.

Claim 17 recites, in its entirety:

> A method of reducing artifacts in an image comprising the step of selecting a median filter window based on an assessment of a pixel value according to a variance of a binary mask.

The text cited by the Office in support of the rejection discusses filters processing five adjacent pixels horizontally along three consecutive lines of video signal. However, it appears that Fairhurst merely steps through the video scan lines in a mechanical sequential fashion, not based upon an assessment and not in accordance with any binary mask. Fairhurst, in both the cited portion as well as anywhere else in the disclosure, fails to disclose "selecting a median filter window based on an assessment of a pixel value according to a variance of a binary mask". Accordingly, Fairhurst fails to anticipate the invention of claim 17. Allowance of claim 17 is earnestly requested.

**New Claims**

Claims 24-29 have been added and are believed be allowable over the cited references for at least the reasons asserted herein with regard to the similar method claims.

**Conclusion**

Based on the amendments and remarks herein, the Applicant respectfully requests prompt issuance of a notice of allowance for claims 1-29 in this matter.

Respectfully Submitted,

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By: _____

Richard J. Holzer, Jr.
Reg. No. 42,668
(720) 377-0774